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EXAMINER	
YACOB, SISAY	

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2612	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/779,429	BOAZ, JON A.	
	Examiner	Art Unit	
	Sisay Yacob	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1 The application of Boaz for "Automated meter reading system, communication and control network for automated meter reading, meter data collector, and associated method" filed on February 13, 2004 has been examined.

Claims 1-42 are pending.

Claim Rejections - 35 USC § 102

2 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3 Claims 31 and 37-41 are rejected under 35 U.S.C. 102(e) as being as being anticipated by US Patent of Belski et al., (6,657,552 B2).

4 As to claim 31, Belski et al., discloses a method of monitoring a utility meter mounted to a building (See item E, Residential part of figure 3), the method comprising mounting a meter data collector defining a remote collection unit adjacent a utility meter

mounted to a building (Items G and W, Residential part of figure 3), collecting meter data from the utility meter by the remote collection unit (Col. 4, lines 52-64; Col. 5, lines 11-47), transmitting the meter data to a router of a communication network service provider, transmitting the meter data through a communication network associated with the communication network service provider, and receiving the meter data from the communication network by a computer device (Col. 5, lines 65-67; Col. 6, lines 1-67; Col. 7, lines 1-30).

5 As to claim 37, Belski et al., discloses a method of collecting utility meter data, the method comprising positioning a plurality of meter data collectors defining a plurality of remote collection units adjacent to respective one of a plurality of utility meters (Col. Col. 4, lines 52-64; Col. 5, lines 11-47; See figures 1-3), each of the plurality of utility meters being mounted to a different building (See item E, Residential part of figure 3), polling each of the plurality of remote collection units from a collection computer positioned remote from the plurality of remote collection units, and transmitting meter data from each of the plurality of remote collection units to the collection computer responsive to the polling (Col. 5, lines 65-67; Col. 6, lines 1-67; Col. 7, lines 1-30).

6 As to claim 38, a method as defined in claim 37, further, Belski et al., discloses wherein the collection computer comprises a field collection unit (Item NCS of figure 3).

7 As to claim 39, a method as defined in claim 37, further, Belski et al., discloses wherein the collection computer comprises a host computer (Col. 6, lines 61-67; Col. 7, lines 1-12).

8 As to claim 40, a method as defined in claim 38, further, Belski et al., discloses the method further comprising a host computer positioned remote from and in communication with the field collection unit (Col. 6, lines 46-52; See figure 3).

9 As to claim 41, a method as defined in claim 38, further comprising transmitting the utility meter data from the field collection unit to a router of a communication network service provider, communicating the utility meter data through a communication network associated with the communication network service provider, and receiving the utility meter data by a host computer in communication with the communication network (Col. 6, lines 36-60; See figure 3).

Rejections - 35 USC § 103

10 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11 The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12 Claims 1-20, 26-30, 32-36 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent of Belski et al., (6,657,552 B2) in view of US Patent of Durrant et al., (7,061,924 B1).

13 As to claims 1 and 11, Belski et al., discloses an automated meter reading network system (Col. 1, lines 11-15) comprising a plurality of utility meters each one positioned remote from the other ones of the plurality of utility meters (Col. 1, lines 66-67; Col. 2, lines 1-4, 14-26; See figure 3), a plurality of sensors adapted to be interfaced with each of the plurality of meters, each positioned remote from another one of the plurality of utility meters, so that at least one of the plurality of sensors interfaces with and is positioned adjacent at least one of the plurality of meters to thereby sense utility usage data from each of the plurality of meters (Col. 2, lines 14-20; Col. 4, lines 45-64; Col. 5, lines 1-47), a communication network (Col. 5, lines 22-31; Col. 6, lines 53-60), a plurality of meter data collectors positioned to collect utility usage data from each of the plurality of sensors so that at least one of the plurality of meter data collectors is positioned adjacent at least one of the plurality of utility meters (Col. 4, lines 60-64; Col.

5, lines 11-31, 46-47) and in communication with at least one of the plurality of sensors which interfaces with the at least one of the plurality of utility meters (See figures 1-3), the plurality of meter data collectors also being adapted to be positioned in communication through the communication network so that each of the plurality of meter data collectors defines one of a plurality of communication nodes in a communication network, a communication node in the communication network and the plurality of meter data collectors defines a plurality of communication nodes in the network (Col. 5, lines 22-32; Col. 6, lines 20-23), and a host computer positioned remote from the plurality of meter data collectors at a utility central station and in communication with each of the plurality of communication nodes in the communication network so that each one of the plurality of communication nodes are adapted to communicate with communication nodes in the communication network and host computer (Col. 6, lines 1-67; Col. 7, lines 1-39). However, Belski et al., does not expressly disclose the plurality of meter data collectors being adapted to be in communication with each other in order to reduce line-of-site communication problems between each of the plurality of communication nodes and the host computer. In the same field of endeavor, Durrant et al., discloses a system for meter reading comprising a plurality of utility meters reading collectors each one positioned remote from the other and host computer, that are adapted to be in communication with each other in order to reduce line-of-site communication problems between each of the plurality of communication nodes and the host computer (Col. 2, lines 30-36; Col. 3, lines 18-67;

Col. 4, lines 1-67; Col. 5, lines 66-67; Col. 6, lines 1-18; Col. 7, lines 28-55; See figures 2 and 4).

It would have been obvious to one ordinary skill in the art to, at the time of the invention, to modify the automated meter reading network system of Belski et al., by incorporating the plurality of meter data collectors being adapted to be in communication with each other and the host computer, as disclose by Durrant et al., in order to have an automated meter reading network system comprising a plurality of utility meters each one positioned remote from the other, a communication network adapted to be positioned in communication with each other through the communication network to thereby reduce line-of-site communication problems between each of the plurality of communication nodes and the host computer, because Durrant et al., discloses a meter reading network system and method that employs software control communication protocols, where the plurality of meter data collectors receive the command and transmit the meter usage data to the host computer either directly or through other meter data collectors. One skilled in the art would recognize Durrant et al., system helps reduces the line-of-site of the communication network and it is well known and widely used in the communication field.

14 As to claim 26, Belski et al., discloses a method of collecting utility meter usage data Col. 4, lines 52-64), the method comprising sensing meter usage data from each of a plurality of utility meters positioned remote from each other (See figure 3), collecting utility usage data by each of a plurality of meter data collectors positioned adjacent each

of the plurality of utility meters, determining a polling sequence of communication signal between a remote host computer and each of the plurality of meter data collectors, polling each of the plurality of meter data collectors with the polling sequence by the host computer positioned remote from the plurality of meter data collectors, and transmitting meter usage data to the host computer from each of the plurality of meter data collectors in responsive to the polling signal by the host computer (Col. 6, lines 61-67; Col. 7, lines 1-59). However, Belski et al., does not expressly disclose the polling by the host computer and the transmission by the meter data collectors being over a preferred polling sequence route that is responsive to the strength of communication signal. Durrant et al., discloses a method for a meter reading comprising a plurality of utility meters reading collectors each one positioned remote from the other and host computer, that are adapted to be in communication with each other the host computer (Col. 2, lines 30-36; Col. 3, lines 18-67; Col. 4, lines 1-67; Col. 5, lines 66-67; Col. 6, lines 1-18; Col. 7, lines 28-55; See figures 2 and 4).

It would have been obvious to one ordinary skill in the art to, at the time of the invention, to modify the automated meter reading network system of Belski et al., by incorporating the plurality of meter data collectors being adapted to be in communication with each other and the host computer, as disclose by Durrant et al., in order to have a method for an automated meter reading network system the polling by the host computer and the transmission by the meter data collectors being over a preferred polling sequence route that is responsive to the strength of communication signal, because Durrant et al., discloses a meter reading network system and method

that employs software control communication protocols, that poll's the meter data collectors based on a table that specify a polling sequence route, wherein the plurality of meter data collectors receive the command and transmit the meter usage data to the host computer either directly or through other meter data collectors by getting a . One skilled in the art would recognize Durrant et al., system helps reduces the line-of-site of the communication network and it is well known and widely used in the communication field.

15 As to claims 2 and 12, a system as defined in claims 1 and 11, further, Durrant et al., discloses wherein each of the plurality of meter data collectors includes a collector transceiver positioned to transmit data to the host computer and to other ones of the plurality of meter data collectors through the communication network and to receive data from the computer and from the other ones of the plurality of meter data collectors through the communication network and a collector controller positioned to control collecting of utility usage data and the transmitting and receiving of data to and from the collector transceiver (Col. 2, lines 30-36; Col. 3, lines 18-67; Col. 4, lines 1-67; Col. 5, lines 66-67; Col. 6, lines 1-18; Col. 7, lines 28-55; See figures 2 and 4).

16 As to claims 3 and 13, a system as defined in claims 2 and 12, further, Belski et al., discloses wherein the host computer includes a host transceiver positioned to transmit data to and receive data from each of the plurality of communication nodes and a host controller positioned to control collecting of utility usage data from each of the

plurality of communication nodes, transmitting data to each of the plurality of communication nodes through the host transceiver, and receiving data from each of the plurality of communication nodes through the host transceiver (Col. 5, lines 19-31; Col. 7, lines 1-39).

17 As to claims 4 and 14, a system as defined in claims 3 and 13, further, Belski et al., discloses wherein each collector controller of the plurality of meter data collectors and the host controller include controller software associated with the controller and having a network data communication protocol, wherein the network data communication protocol includes a preselected application layer, and wherein the communication network comprises a radio frequency communication network (Col. 2, lines 60-66; Col. 5, lines 65-67; Col. 6, lines 1-67; Col. 7, lines 1-16).

18 As to claims 5 and 15, a system as defined in claims 4 and 14, further, Belski et al., discloses wherein the radio frequency communication network has a frequency in the range of 850-1000 mega-hertz (Col. 22, lines 56-59), wherein the frequency continuously changes between a plurality of different preselected frequencies to thereby define frequency hopping (Col. lines 17-29; Col. 24, lines 5-9), wherein the controller software of the host controller initiates polling of the plurality of communication nodes through the frequency hopping within the communications network (Col. 21, lines 9-13), and wherein each of the plurality of communication nodes responds to the polling by the

host computer through the frequency hopping within the communications network (Col. 12, lines 40-44; Col. 12, lines 15-17).

19 As to claims 6 and 16, a system as defined in claims 5 and 15, further, since Durrant et al., discloses a meter reading network system comprising a plurality of utility meters each one positioned remote from the other ones of the plurality of utility meters, the plurality of meter data collectors being adapted to be in communication with each other and the host computer (Col. 2, lines 30-36; Col. 3, lines 18-67; Col. 4, lines 1-67; Col. 5, lines 66-67; Col. 6, lines 1-18; Col. 7, lines 28-55; See figures 2 and 4).

It would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the combination of Belski et al., and Durrant et al., in order to have the network software includes an autosequencer to initiate polling of the plurality of communication nodes whereby each of the plurality of communication nodes is individually attempted to be polled by the host computer to determine a strength of communication signal between the host computer and each of the plurality of communication nodes, wherein each of the plurality of communication nodes also attempt to communicate with each other responsive to the autosequencer to determine a strength of communication signal between one of the plurality of communications nodes and another one of the plurality of communication nodes, and wherein the autosequencer further determines a communication sequence to each of the plurality of communication nodes responsive to the strength of communication signal between the host computer and each of the plurality of communication nodes and responsive to the

strength of communication signal between each of the plurality of communication nodes to define a preferred communication sequence path to each of the plurality of communication nodes from the host computer, because Durrant et al., discloses a meter reading network system comprising a plurality of utility meters each one positioned remote from the other ones of the plurality of utility meters, the plurality of meter data collectors being adapted to be in communication with each other and the host computer in order to reduce or eliminate line-of-site between the plurality of utility meters and the host computer. Also, it is well known and widely used in the communication field to have each communication tower to be in communication with each other and the host station in order to reduce or eliminate line-of-site.

20 As to claims 7, 17 and 27, a system and method as defined in claims 6, 16 and 26, further, Durrant et al., discloses wherein the autosequencer updates the preferred communication sequence path to allow the preferred communication sequence path to vary over time (Col. 6, lines 54-61).

21 As to claims 8, 18 and 28, a system and method as defined in claims 7, 17 and 27, further, Durrant et al., discloses wherein the plurality of meter data collectors include a first meter data collector (Item 406 of figure 4), a second meter data collector in communication with the first meter data collector (Item 404 of figure 4), and a third meter data collector in communication with at least one of the first and second meter data collectors (Item 410 of figure 4), wherein the first meter data collector is positioned

remote from the host computer to thereby have a greater signal strength than the second meter data collector and the third meter data collector, wherein the second meter data collector is positioned remote from host computer to thereby have a greater signal strength than the third meter data collector, and wherein the network software further includes a raking router to collect meter usage data from the first meter data collector responsive to polling received from the host computer and to rakingly collect data from each of the second and third meter data collectors responsive to the polling so that meter usage data is collected from each of the first, second, and third meter data collectors responsive to polling the first meter data collector and routed to the host computer (Col. 5, lines 1-67; Col. 6, lines 1-67).

22 As to claims 9, 19 and 29, a system as defined in claims 7, 11 and 27, further, Belski et al., discloses wherein at least one of the plurality of meter data collector is positioned within at least one of the following the same housing as at least one of the plurality of utility meters, a separate housing positioned closely adjacent at least one of the plurality of utility meters, and a separate housing positioned closely adjacent a subset of the plurality of utility meters (See figures 1-3).

23 As to claims 10, 20 and 30, a system as defined in claims 7, 11 and 29, further, Belski et al., discloses wherein the host computer further includes memory having a meter data collector database associated therewith to thereby store meter collector data associated with each of the plurality of meter data collectors, the meter collector data

including collector identification, collector physical address, and strength of signal between collectors (Col. 7, lines 1-16).

24 As to claim 32, a method as defined in claim 31, further, Belski et al., wherein the remote collection unit comprises a first remote collection unit, the utility meter comprises a first utility meter, and the building comprises a first building (Item labeled Residence in figure 3), and the method further comprises mounting a second remote collection unit adjacent a second utility meter mounted to second building, collecting meter data from the second utility meter by the second remote collection unit and transmitting the meter data from the second utility meter by the second remote collection unit (Item labeled commercial in figure 3). However, Belski et al., does not expressly disclose transmitting the meter data of the second utility meter to the first remote collection unit, and wherein the meter data transmitted to the router comprises meter data from the first and second remote collection units. In the same filed of endeavor, Durrant et al., discloses a method comprising transmitting utility meter data from a first remote collection unit to a second remote collection unit of the plurality of collection units and transmitting utility meter data of the first remote collection unit and utility meter data of the second remote collection unit from the second remote collection unit to the router (Col. 2, lines 30-36; Col. 3, lines 18-67; Col. 4, lines 1-67; Col. 5, lines 66-67; Col. 6, lines 1-18; Col. 7, lines 28-55; Items 404, 406 and 410 of figure 4; See figure 2).

It would have been obvious to one ordinary skill in the art to, at the time of the invention, to modify the method for automated meter reading network system of Belski

et al., by incorporating the plurality of meter data collectors being adapted to be in communication with each other to forward the data to the remote host by using some of the data collectors as a router, as disclose by Durrant et al., in order to have a method for an automated meter reading network system comprising a plurality of utility meters each one positioned remote from the other, wherein a first remote collection unit to a second remote collection unit of the plurality of collection units and transmitting utility meter data of the first remote collection unit and utility meter data of the second remote collection unit from the second remote collection unit to the router, because Durrant et al., discloses a meter reading network method that employs software control communication protocols, where the plurality of meter data collectors receive the command and transmit the meter usage data to the host computer either directly or through other meter data collectors. One skilled in the art would recognize Durrant et al., system helps reduces the line-of-site of the communication network and it is well known and widely used in the communication field.

25 As to claim 33, Belski et al., discloses a method of collecting utility meter data from a plurality of utility meters each mounted to a different building and each in communication with a respective one of a plurality of meter data collectors defining a plurality of remote collection units (Col. 4, lines 52-64; Col. 5, lines 11-47; See items E, G and W, Residential part of figure 3), the method comprising transmitting utility meter data from a first remote collection unit of the plurality of utility of remote collection units, and transmitting utility meter data of the first remote collection unit and utility meter data

of the second remote collection unit from the second remote collection unit to a host computer (Col. 5, lines 65-67; Col. 6, lines 1-67; Col. 7, lines 1-30). However, Belski et al., does not expressly disclose the method comprising transmitting utility meter data from a first remote collection unit of the plurality of utility of remote collection units to a second remote collection unit of the plurality of collection units before being transmitted to the host computer. In the same field of endeavor, Durrant et al., discloses the method comprising transmitting utility meter data from a first remote collection unit of the plurality of utility of remote collection units to a second remote collection unit of the plurality of collection units and transmitting utility meter data of the first remote collection unit and utility meter data of the second remote collection unit from the second remote collection unit to a host computer (Col. 2, lines 30-36; Col. 3, lines 18-67; Col. 4, lines 1-67; Col. 5, lines 66-67; Col. 6, lines 1-18; Col. 7, lines 28-55; See figures 2 and 4).

It would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the automated meter reading network system of Belski et al., by incorporating the method for transmitting utility meter data, as disclosed by Durrant et al., in order to have a method of collecting utility meter data from a plurality of utility meters each mounted to a different building and each in communication with a respective one of a plurality of meter data collectors defining a plurality of remote collection units, the method comprising transmitting utility meter data from a first remote collection unit of the plurality of utility of remote collection units to a second remote collection unit of the plurality of collection units, and transmitting utility meter data of the first remote collection unit and utility meter data of the second remote collection unit

from the second remote collection unit to a host computer, because Durrant et al., discloses a method comprising transmitting utility meter data from a first remote collection unit of the plurality of utility of remote collection units to a second remote collection unit of the plurality of collection units and transmitting utility meter data of the first remote collection unit and utility meter data of the second remote collection unit from the second remote collection unit to a host computer.

26 As to claim 34, a method as defined in claim 33, further, Durrant et al., discloses the method further comprising transmitting meter data from a third remote collection unit to the first remote collection unit and wherein the utility meter data of the first remote collection unit includes utility meter data from the third remote collection unit (See Items 404, 406 and 410 of figure 4).

27 As to claim 35, Belski et al., discloses a method of collecting utility meter data (Col. Col. 4, lines 52-64; Col. 5, lines 11-47; See items E, G and W, Residential part of figure 3; See figures 1 and 2), the method comprising positioning a meter data collector defining a remote collection unit having bi-directional RF data communication within a housing having a glass facing on at lest one side thereof, collecting utility meter data by the remote collection unit positioned adjacent the housing, polling the remote collection unit from a host computer by RF data communication through the glass facing, and transmitting the collected utility meter data from the remote collection unit through the glass facing to the host computer responsive to the polling (Col. 5, lines 65-67; Col. 6,

lines 1-67; Col. 7, lines 1-30). However, Belski et al., does not expressly disclose housing having a glass facing on at lest one side. In the same field of endeavor, Cumeralto et al., discloses a method of collecting utility meter data that comprises a housing having a glass facing on at lest one side (Page 3, Par. 0040).

It would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the automated meter reading network system of Belski et al., by incorporating a housing having a glass facing on at lest one side, as disclosed by Cumeralto et al., in order to have a method of collecting utility meter data, the method comprising positioning a meter data collector defining a remote collection unit having bi-directional RF data communication within a housing having a glass facing on at lest one side thereof, collecting utility meter data by the remote collection unit positioned adjacent the housing, polling the remote collection unit from a host computer by RF data communication through the glass facing, and transmitting the collected utility meter data from the remote collection unit through the glass facing to the host computer responsive to the polling, because Cumeralto et al., discloses a method of collecting utility meter data that comprises a housing having a glass facing on at lest one side and it is well known and widely used in the art.

28 As to claim 36, a method as defined in claim 35, further, Belski et al., discloses wherein the utility meter comprises a first utility meter of a plurality of utility meters (Item labeled Residence in figure 3), wherein the first utility meter comprises one of a gas utility meter (Item G of Residence in figure 3), an electric utility meter, (Item E of

Residence in figure 3), and a water meter, (Item W of Residence in figure 3), wherein a second of the plurality of utility meters (Item labeled Commercial in figure 3) comprises a different one of a gas utility meter (Item G of Commercial in figure 3), an electric utility meter(Item E of Commercial in figure 3), and a water utility meter(Item W of Commercial in figure 3), and wherein the step of collecting includes collecting utility meter data from both the first and second utility meters by the remote collection unit (Col. 4, lines 52-64).

29 As to claim 42, a method as defined in claim 38, however, Belski et al., does not expressly disclose wherein a first remote collection unit of the plurality of remote collection units transmits utility meter data to a second remote collection unit of the plurality of remote collection units, wherein the second remote collection unit transmits the utility meter data of the first and second remote collection units to a third remote collection unit of plurality of remote collection units, and wherein the third remote collection unit transmits utility meter data of the first, second, and third remote collection unit to the field collection unit. In the same field of endeavor, Durrant et al., discloses the method comprising transmitting utility meter data from a first remote collection unit that transmit utility meter data to a second remote collection unit, a second remote collection unit transmits the utility meter data of the first and second remote collection units to a third remote collection unit of plurality of remote collection units, (Col. 2, lines 30-36; Col. 3, lines 18-67; Col. 4, lines 1-67; Col. 5, lines 66-67; Col. 6, lines 1-18; Col. 7, lines 28-55; See figures 2 and 4).

It would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the automated meter reading network system of Belski et al., by incorporating the method for transmitting utility meter data, as disclosed by Durrant et al., in order to have a first remote collection unit of the plurality of remote collection units transmits utility meter data to a second remote collection unit of the plurality of remote collection units, wherein the second remote collection unit transmits the utility meter data of the first and second remote collection units to a third remote collection unit of plurality of remote collection units, and wherein the third remote collection unit transmits utility meter data of the first, second, and third remote collection unit to the field collection unit., because Durrant et al., discloses a method comprising transmitting utility meter data from a first remote collection unit of the plurality of utility of remote collection units and command from the central control through a number of other remote data collection units in order to decrease a line-of-site between the remote data collection units and the remote central control.

30 Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent of Belski et al., (6,657,552 B2) in view of US Publication of Cumeralto et al., (20020109607 A1).

31 As to claim 21, Belski et al., discloses a meter data collector to interface with a utility meter (Col. 4, lines 60-64; Col. 5, lines 16-22, 46-47), the meter data collector including a stationary housing adapted to be mounted adjacent a utility meter (Col. 4,

lines 60-64), a sensor positioned to sense meter usage data from the utility meter, a transceiver associated with the housing to transmit meter usage data from the meter data collector (Col. 4, lines 60-64; Col. 5, lines 11-31, 46-47; See figures 1-3) and to receive communication remote from the stationary housing in (Col. 6, lines 21-26, 61-67See figure 3), a collector positioned within the housing to control data communication to and from the transceiver and to control collecting of meter usage data from the sensor responsive to a remote command, and a memory positioned within the peer stationary housing and associated with and in communication with the controller to store data therein, the memory including network software to communicate the meter usage data remotely through a communication network (Col. 5, lines 11-67; Col. 6, lines 1-67). However, Belski et al., does not expressly disclose the transceiver being high power transceiver and the remote communication being medium to high range. In the same field of endeavor, Cumeralto et al., discloses a meter reading network system, comprising a plurality of utility meters each one positioned remote from the host and having a high power transceiver and the remote communication being medium to high range (Page 2, Par. 0013; Page 3, Par. 0041).

It would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the automated meter reading network system of Belski et al., by incorporating the high power transceiver and the remote communication being medium to high range, as disclosed by Cumeralto et al., in order to have a meter data collector to interface with a utility meter, the meter data collector including a stationary housing adapted to be mounted adjacent a utility meter, a sensor positioned to sense meter

usage data from the utility meter, a high power transceiver associated with the housing to transmit meter usage data from the meter data collector and to receive communication remote from the stationary housing in a medium to high range, a collector positioned within the housing to control data communication to and from the high power transceiver and to control collecting of meter usage data from the sensor responsive to a remote command, and a memory positioned within the peer stationary housing and associated with and in communication with the controller to store data therein, the memory including network software to communicate the meter usage data remotely through a communication network, because Cumeralto et al., discloses automated meter reading network system that employs high power transceiver and having a medium to high remote communication offers a wider transmission range and help minimize the number of repeaters required (Page 2, Par. 0011-0012).

32 As to claim 22, a system as defined in claim 21, further, Belski et al., discloses wherein the network software includes a preselected network data communication protocol, wherein the network data communication protocol includes a preselected application layer, and wherein the communication network comprises a radio frequency communication network (Col. 2, lines 60-66; Col. 5, lines 65-67; Col. 6, lines 1-67; Col. 7, lines 1-16).

33 As to claim 23, a meter data collector as defined in claim 22, further, Belski et al., discloses wherein the radio frequency communication network has a frequency in the

range of 850-1000 mega-hertz (Col. 22, lines 56-59), wherein the frequency continuously changes between a plurality of different preselected frequencies to thereby define frequency hopping (Col. lines 17-29; Col. 24, lines 5-9), wherein a remote host computer controller initiates polling of the meter data collector through the frequency hopping within the communications network (Col. 21, lines 9-13), and wherein the collector controller responds to the polling by the host computer controller through the frequency hopping within the communications network (Col. 12, lines 40-44; Col. 12, lines 15-17).

34 Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent of Belski et al., (6,657,552 B2) in view of US Publication of Cumeralto et al., (20020109607 A1) and further in view of US Patent of Durrant et al., (7,061,924 B1).

35 As to claim 24, a system as defined in claims 5 and 15, however, the combination of Belski et al., and Cumeralto et al., does not expressly disclose wherein the network software includes an autosequencer to initiate polling of the plurality of communication nodes whereby each of the plurality of communication nodes is individually attempted to be polled by the host computer to determine a strength of communication signal between the host computer and each of the plurality of communication nodes, wherein each of the plurality of communication nodes also attempt to communicate with each other responsive to the autosequencer to determine a strength of communication signal between one of the plurality of communications

nodes and another one of the plurality of communication nodes, and wherein the autosequencer further determines a communication sequence to each of the plurality of communication nodes responsive to the strength of communication signal between the host computer and each of the plurality of communication nodes and responsive to the strength of communication signal between each of the plurality of communication nodes to define a preferred communication sequence path to each of the plurality of communication nodes from the host computer. In the same field of endeavor, Durrant et al., discloses a meter reading network system comprising a plurality of utility meters each one positioned remote from the other ones of the plurality of utility meters, the plurality of meter data collectors being adapted to be in communication with each other and the host computer (Col. 2, lines 30-36; Col. 3, lines 18-67; Col. 4, lines 1-67; Col. 5, lines 66-67; Col. 6, lines 1-18; Col. 7, lines 28-55; See figures 2 and 4).

It would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify the combination of Belski et al., and Cumeralto et al., by incorporating the plurality of meter data collectors being adapted to be in communication with each other and the host computer, as disclosed by Durrant et al., in order to have the network software includes an autosequencer to initiate polling of the plurality of communication nodes whereby each of the plurality of communication nodes is individually attempted to be polled by the host computer to determine a strength of communication signal between the host computer and each of the plurality of communication nodes, wherein each of the plurality of communication nodes also attempt to communicate with each other responsive to the autosequencer to determine

a strength of communication signal between one of the plurality of communications nodes and another one of the plurality of communication nodes, and wherein the autosequencer further determines a communication sequence to each of the plurality of communication nodes responsive to the strength of communication signal between the host computer and each of the plurality of communication nodes and responsive to the strength of communication signal between each of the plurality of communication nodes to define a preferred communication sequence path to each of the plurality of communication nodes from the host computer, because Durrant et al., discloses a meter reading network system comprising a plurality of utility meters each one positioned remote from the other ones of the plurality of utility meters, the plurality of meter data collectors being adapted to be in communication with each other and the host computer in order to reduce or eliminate line-of-site between the plurality of utility meters and the host computer. Also, it is well known and widely used in the communication field to have each communication tower to be in communication with each other and the host station in order to reduce or eliminate line-of-site.

36 As to claim 25, a meter data collector as defined in claim 24, further, Durrant et al., discloses wherein the autosequencer updates the preferred communication sequence path to allow the preferred communication sequence path to vary over time (Col. 6, lines 54-61).

Conclusion

37 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following cited arts are further to show the sate of art related to automated meter reading system, communication and control network for automated meter reading, meter data collector, and associated method.

38 In the US Patent of (6,078,785) Bush discloses a system and method for a demand reporting for utility reading that in response to radio requests from a central reporting station that may, according to the distance of the interrogated site, be relayed through each of a number of like sites, which uses demand-reporting radio-linked radio-relay-communicating electronic watt meters that can be arrayed in great numbers over large areas so as to monitor and to report upon demand by radio instantaneous and/or historical electricity usage by homes and by businesses within the area.

39 In the US Patent of (6,172,616) Johnson et al., discloses a communications network for collecting data from remote data generating stations, and more particularly a radio based system for sending data from a plurality of network service modules, with each network service module attached to a meter, and communicating through remote cell nodes and through intermediate data terminals, to a central data terminal.

40 In the US Patent of (6,333,975) Brunn et al., discloses systems with the ability to remotely communicate with and read utility meters.

41 In the US Patent of (6,333,975) Gelvin et al., discloses intelligent networks that include connection to the physical world, in particular, the invention relates to providing distributed network and Internet access to sensors, controls, and processors that are embedded in equipment, facilities, and the environment.

42 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sisay Yacob whose telephone number is (571) 272-8562. The examiner can normally be reached on Monday through Friday 8:00 AM - 4:30 PM.

43 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery A. Hofsass can be reached on (571) 272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

44 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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